

Application No. 10/681,535
Amendment Dated May 20, 2005
Reply to Office Action of February 22, 2005

Rest Available Conv

REMARKS/ARGUMENTS

Claims 1 and 3-21 are pending, with Claims 1 and 12 independent. By this amendment, Claims 1, 2, 4 and 5 are amended, Claims 12-21 are added, and Claim 3 is cancelled. Reconsideration in view of the foregoing amendments and the following remarks is respectfully requested.

No new subject matter is added by this amendment. In fact, except as indicated in the remarks set forth below, the amendments to the claims are made for the purpose of addressing informalities and improving the clarity of the claims, and are not required to overcome any prior art cited by the Office Action.

CLAIM OBJECTIONS

Claims 5 and 9 stand objected to because of informalities. The objections are respectfully traversed for at least the reasons set forth below.

Claim 5 is amended for clarity to provide anteceded basis for the features of the claim. Regarding Claim 9, Applicants respectfully submit that the phrase "the excitation/receiving units are plug-in devices adapted to be inserted into a common housing in such variable numbers as are needed in accordance with a number of required ports" is not grammatically incorrect, and that neither "as" nor "are" needs to be deleted for clarity or grammatical correctness. Withdrawal of the objections is respectfully requested.

Application No. 10/681,535
Amendment Dated May 20, 2005
Reply to Office Action of February 22, 2005

Best Available Copy

35 U.S.C. §102 REJECTIONS

Claims 1-7, 9 and 11 stand rejected under 35 U.S.C. §102(b) over Bockelman (U.S. Patent No. 5,751,153). This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner asserts that Bockelman teaches a measuring device comprising a plurality of excitation/receiving units, each comprising a port, at least one receiving apparatus, and at least one oscillator. However, Applicants respectfully submit that Bockelman does not disclose that each of the excitation/receiving units comprises at least one independent signal generator adapted to apply an excitation signal to the device under test, as recited in independent Claim 1.

Bockelman discloses an apparatus for characterizing a multi-port circuit where a single signal generator 320 (or 420) feeds several two-ports test sets 330, 340, 350 (or 430, 440). Each two-port test set is connected on its upward side to a DUT multi-port circuit and has its own reference oscillator. The oscillator provides a down-modulation signal that is input to mixers 439, 440. Every two-port test set also comprises switches 436 and 446. With this apparatus, it is possible to measure the DUT characterizing S-parameters.

However, a problem that arises with the switches 436 and 446 of Bockelman is that transmission and reflection measurements can only be carried out one after the other, at least because the test sets share a common signal generator. In other words, with shared signal generators, Bockelman does not disclose a measurement of the transmission and reflection parameters of a DUT at one instance. In contrast, Claim 1 of the current application recites an

Best Available Copy

Application No. 10/681,535
Amendment Dated May 20, 2005
Reply to Office Action of February 22, 2005

individual signal generator for each excitation/receiving unit. This enables transmission and reflection parameters to be measured at one instance.

Each of the test sets 430 and 440 relied upon by the Examiner as the excitation/receiving units receives output component signals 429 from the same shared single generator 420. Therefore, each test set 430 and 440 does not comprise at least one independent signal generator. As disclosed in Bockelman, when in a first operation mode, the signal source is coupled to the input 427 of a zero degree signal splitter to provide two output component signals 429 having substantially equal amplitude and substantially equal phase. When in a second operation mode, the signal source 421 is switched to the input 428 of a 180 degree splitter, such that the signal generator 420 outputs signal components 429 of substantially equal amplitude, but having a phase difference of substantially 180 degrees. Therefore, the signal components 429 output to the test sets 430, 440 are at least substantially the same, and at most, the same and offset. Regardless, the signals are not independent of each other. See Col. 5, lines 12-20, and Fig. 4.

In contrast, each claimed excitation/receiving unit comprises at least one signal generator. Moreover, each independent signal generator (at least one per each excitation/receiving unit) may have a signal frequency and/or phase that is different with respect to signal generators of other excitation/receiving units, as recited in the independent claims. Because the signal generator 420 in Bockelman outputs signal components 429 to a plurality of test sets 430, 440, Bockelman does not disclose that the frequency and/or phase of the excitation signal of each signal generator is/are adjustable independently of a frequency and/or phase of each other excitation signal, as recited in independent Claim 12.

Best Available Copy

Application No. 10/681,535
Amendment Dated May 20, 2005
Reply to Office Action of February 22, 2005

In conclusion, because the test sets 430, 440 in Bockelman share a common signal generator 420, Bockelman does not disclose the features of the independent claims. In particular, Bockelman does not disclose that each of the excitation/receiving units comprises at least one independent signal generator, and that the frequency and/or phase of the excitation signals are independently adjustable, as recited in the independent claims. Therefore, Bockelman does not disclose independent Claims 1 and 12 (which is substantially a combination of Claims 1 and 3). Following, Bockelman does not disclose the features in dependent claims 2, 4-7, 9 and 11, which depend from independent Claim 1 at least because of their dependency. Withdrawal of the rejection of Claims 1-7, 9 and 11 under 35 U.S.C. §102(b) is respectfully requested.

35 U.S.C. §103 CLAIM REJECTIONS

Claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Bockelman in view of Grace et al. (U.S. Patent No. 5,191,294). This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner admits that Bockelman does not teach a LAN bus system, and asserts that it would have been obvious to modify Bockelman to incorporate the teaching of a bus system being a LAN bus system as taught by Grace et al. since Grace et al. teaches that such an arrangement is beneficial for providing a conventional bus interface for communicating with a VNA. However, Applicants respectfully submit that the combination of Bockelman and Grace do not teach and would not have resulted at least in each of the excitation/receiving units

Best Available Copy

Application No. 10/681,535
Amendment Dated May 20, 2005
Reply to Office Action of February 22, 2005

comprising at least one independent signal generator adapted to apply an excitation signal to the device under test, as recited in independent Claim 1, from which Claim 8 depends.

The system in Grace teaches a noise module 250 with a noise source 262 and a mixer 280. However, the noise module 250 does not comprise a local oscillator or independent signal generator for each excitation/receiving unit. Therefore, Grace et al. does not teach the claimed features missing in Bockelman. Accordingly, assuming *arguendo* that Bockelman and Grace could be combined, the combination would not have resulted in the features recited in Claim 1 or in Claim 8, which depends from Claim 1. Withdrawal of the rejection of Claim 8 under 35 U.S.C. §103(a) is respectfully requested.

Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Bockelman in view of the MPEP §2144.04, item V. This rejection is respectfully traversed for at least the reasons set forth below.

The Examiner admits that Bockelman does not teach that the excitation/receiving units are separate from a main housing and placed proximal to the device under test, and asserts that it would have been obvious to modify Bockelman to incorporate the teaching of separating the excitation/receiving units as discussed under "making separable" according to MPEP §2144.04, since such an arrangement is to provide a preferably desirable configuration for an intended use of the system of Bockelman. This assertion is respectfully traversed.

The MPEP does not cure the deficiencies of Bockelman in that the MPEP does not teach or suggest the obviousness of each excitation/receiving unit comprising at least one independent signal generator as recited in independent Claim 1 from which Claim 10 depends. It is important

Best Available Copy

Application No. 10/681,535
Amendment Dated May 20, 2005
Reply to Office Action of February 22, 2005

that each excitation/receiving unit comprise at least one independent signal generator so that transmission and reflection parameters can be measured at one instance, which is not possible from the teachings of Bockelman. Accordingly, the combination of Bockelman and MPEP §2144.04 would not have resulted in the features recited in Claim 1 or Claim 10, which depends from Claim 1. Withdrawal of the rejection of Claim 10 under 35 U.S.C. §103 is respectfully requested.

NEW CLAIMS

This amendment adds new Claims 12-21, which are believed to be allowable. Independent Claim 12 is substantially similar to Claim 1, and adds that each signal generator is adapted to produce an excitation signal having a frequency and/or phase adjustable independently of a frequency and/or phase of each other excitation signal of other excitation/receiving units. As discussed above, the signal generator 420 of Bockelman does not disclose independently adjustable excitation signals. Claim 13 depends from Claim 12 and recites that the at least one signal generator is at least one independent signal generator. That is, the at least one signal generator is not shared by the excitation/receiving units.

Claim 14 recites the features added by Claim 4, but depends from Claim 12. Claim 15 recites the features added in Claim 5, but depends from Claim 14. Claim 16 recites the features added in Claim 6, but depends from Claim 12. Claim 17 recites the features added in Claim 7, but depends from Claim 16. Claim 18 recites the features added in Claim 8, but depends from Claim 17. Claims 19-21 recite the features added in Claims 9-11, respectively, but depend from Claim 12. Applicants again assert that all of the new claims are allowable.

Best Available Copy

Application No. 10/681,535
Amendment Dated May 20, 2005
Reply to Office Action of February 22, 2005

CONCLUSION

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

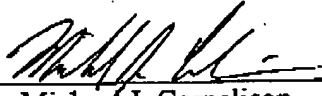
Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

May 20, 2005

Please charge or credit our Account
No. 03-0075 as necessary to effect
entry and/or ensure consideration of
this submission.

By


Michael J. Cornelison
Registration No. 40,395
Customer No. 03000
(215) 567-2010
Attorneys for Applicant(s)